

REMARKS/ARGUMENTS

Applicant has carefully reviewed and considered the Office Action mailed on June 13, 2007, and the references cited therewith.

Claims 1, 10, 17, 23, and 31 are amended, no claims are cancelled or added; as a result, claims 1 and 4-37 are now pending in this application.

Objection to Drawings

The drawings were objected to under 37 CFR 1.83(a) for not showing every feature of the invention specified in the claims. Specifically, the Examiner required a third motor be shown, or cancel the feature from the claim(s).

Reference to a third motor appears in claims 9, 10, 14, 23, 24, 27, 31, and 33. In each of the above-mentioned claims, reference is made to a third motor in setting forth a limitation to a circuit configuration to accomplish a particular function, e.g., a configuration “to drive a third motor.” A third motor per se is not claimed. Therefore, Applicant respectfully submits that three motors need not be shown in a single drawing as a feature of the invention.

Figure 1A shows one of the claimed circuit configurations, e.g., a configuration as four discrete switches, and Figure 1B shows the other claimed configuration e.g., a configuration to drive a motor. One having ordinary skill in the art will understand from Figure 2, along with Figures 1A and 1B, how the three configurable H-bridge circuits, e.g., 202(1), 202(2) and 202(3) in Figure 2, can each be configured and implemented as discrete switches or as a motor drive circuit, e.g., H-bridge circuit 202(3) could be implemented to drive a third motor in a manner shown for H-bridge circuits 202(1) or 202(2) or in Figure 1B. Thus, the claimed circuit configuration features are adequately illustrated by the original drawings. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the objection to the drawings.

§103 Rejection of the Claims

Claim 1 was rejected under 35 USC § 103(a) as being anticipated by Hella (EP0833437) in view of Applicants admitted prior art (AAPA).

Claims 4-16 and 23-34 were rejected under 35 USC § 103(a) as being unpatentable over Hella (EP0833437) in view of AAPA, and further in view of Blasius et al (U.S. Patent No. 4,573,410).

Claims 17, 19-21 and 35-37 were rejected under 35 USC § 103(a) as being unpatentable over Hella (EP0833437) in view of Blasius et al (U.S. Patent No. 4,573,410).

Claims 18 and 22 were rejected under 35 USC § 103(a) as being unpatentable over Hella (EP0833437) in view of Blasius et al (U.S. Patent No. 4,573,410) as applied to claim 17 above, and further in view of AAPA.

Applicant respectfully disputes admitting any prior art, and traverses the rejections as follows.

The Office Action mailed 6/13/2007 acknowledges that the Hella reference does not teach a “register is configured to maintain an indicator of the configurable first H-bridge circuit configuration” (independent claims 4 and 29), e.g., 212 in Figure 2 of the present disclosure; does not teach “writing an indicator to a configuration register to indicate an implementation by alternatively closing switches of a configurable H-bridge circuit as at least one of a motor drive circuit or as discrete switches” (claim 17), e.g., 304 and 312 in Figure 3 of the present disclosure; and does not teach “the register maintains an indication of the four switches’ collective configuration separate from indications of each switches individual configuration” (claim 35), e.g., 216 and 220 in Figure 2 of the present disclosure. Nor is it suggested that the alleged admitted prior art describe, teach, or suggest the above-mentioned claimed limitations. The Office Action looks to the Blasius reference for these missing claim elements, stating for example, “Blasius et al teach a configuration register (52) that maintains an indicator of the configuration of the H-bridge (col. 8:14-27, 43-58; col. 9:7-15).”

The cited portions of the Blasius et al. reference describes an “integrated circuit 52 [which] comprises four outputs permitting the semi-bridge connection of four register motors 9 or the [full] bridge connection of two register motors 9” (col. 8:24-27). Figure 4 of the Blasius reference shows a “logic diagram of the integrated circuit 52 which comprises inverters, AND elements, NAND elements, NOR elements and flip-flops” (col. 8:28-30). The Blasius reference does not appear to describe or teach integrated circuit 52 as being a register, or suggest integrated circuit 52 possesses any indicating capabilities. Indeed, the Blasius reference appears to use the term “register,” which might suggest relevance of the Blasius reference in a keyword search, only in reference to the type of motors being controlled (register motors are used to provide remote feedback as to their positioning, e.g., registration, as part of a printing press apparatus).

Integrated circuit 52 of the Blasius reference appears to receive and implement a bridge configuration selection input signal FZ(bar)/RE, specifying either a semi- or full-bridge configuration, based on other logic signals as well. It appears that integrated circuit 52 does not indicate, or include means for indicating, the individual switch configurations separate from controlling logic outputs coupled thereto, e.g., E1+, E1-, etc., and the actual power outputs, e.g., M1+, M1-, etc. For example, the flip-flops, e.g., 54 and 55, do not appear to represent individual switch configurations since additional logic is performed in the pulse signal processing unit 64 and braking logic 65 portions of integrated circuit 52, using additional signal inputs to integrated circuit 52, including the bridge configuration selection input signal FZ(bar)/RE, subsequent to the flip-flop outputs, in determining the switch control signals, e.g., E1+, E1-, etc. Furthermore, integrated circuit 52 does not appear to indicate the collective configuration of the switches, e.g., 56-59, as being in one of an H-bridge or discrete switch configuration. The H-bridge selection signal, e.g., FZ(bar)/RE, input to the integrated circuit (52), specifies semi- or full-bridge configurations. Thus, even if the integrated circuit 52 of the Blasius reference were implemented in combination with the Hella reference, it would not

result in a configuration register for indicating the H-bridge configuration and discrete switch configurations.

In contrast, one or more of the claimed embodiments of the present invention are inventive over the prior art in using a register for indicating a configuration of a configurable H-drive circuit as a motor drive circuit or discrete switches. One having ordinary skill in the art will appreciate that having an indication of the configuration of a configurable H-bridge circuit modifies the information provided by indications of the individual switches alone. In referring to Figure 2 of the present disclosure, consider the following example: assume closure of one high and one low switch is indicated, e.g., 218(1) and 218(4), by configuration register 212. If a discrete switches configuration is also indicated, e.g., 216, then two individual devices are being powered. However, if a motor drive circuit configuration is also indicated, e.g., 216, then a third motor is running in a particular direction, e.g., forward or backward. Thus, the information provided by the individual switch indications is quite different depending on the indication of the H-bridge circuit configuration. This improvement to configurable H-bridge circuit functionality, as provided in the claimed embodiments of the present invention, is not disclosed in the cited references.

Independent claims 4, 17, 29, and 35 previously included a configuration register, e.g., 212 in Figure 2 of the present disclosure. Applicant has amended claim 1 to include a register configured to maintain an indication, amended claim 10 to include a register configured to indicate a status, amended claim 23 to include indicating a configuration, and amended claim 31 to include a means to indicate a configuration.

Applicant submits that the Hella reference, alone or in combination with the Blasius et al. references and/or the alleged admitted prior art asserted by the Examiner, do not describe, teach, or suggest each and every element provided in the Applicant's independent claims. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the 103 rejection of the independent claims, 1, 4, 10, 17, 23, 29, 31, and 35, as well as those claims that depend therefrom.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney Robert D. Wasson at (360) 212-2338 to facilitate prosecution of this matter.

At any time during the pendency of this application, please charge any additional fees or credit overpayment to the Deposit Account No. 08-2025.

CERTIFICATE UNDER 37 CFR §1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: **MS AMENDMENT** Commissioner for Patents, P.O. BOX 1450, Alexandria, VA 22313-1450 on this 13th day of September, 2007.

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